United States Department of Agriculture

Natural Resources Conservation Service

Lakewood, Colorado

RWA 10190001

February 2010

South Platte Headwaters Watershed

Hydrologic Unit Code 10190001

Rapid Assessment

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Introduction

Background Information

The Natural Resources Conservation Service (NRCS) is encouraging the development of rapid watershed assessments in order to increase the speed and efficiency generating information to guide conservation implementation, as well as the speed and efficiency of putting it into the hands of local decision makers.

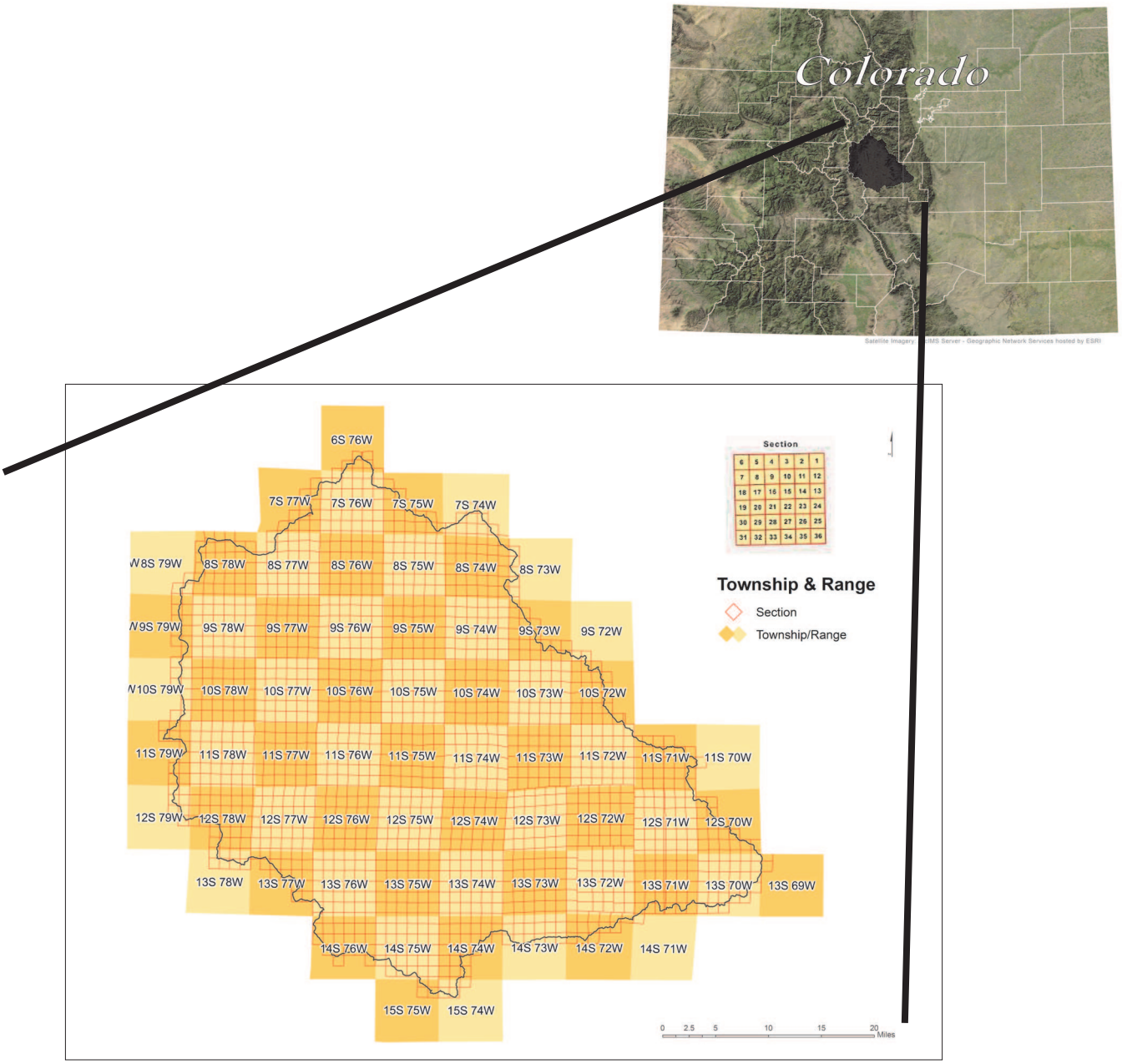
Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders. These assessments help land-owners and local leaders set priorities and determine the best actions to achieve their goals.

Benefits of these Activities

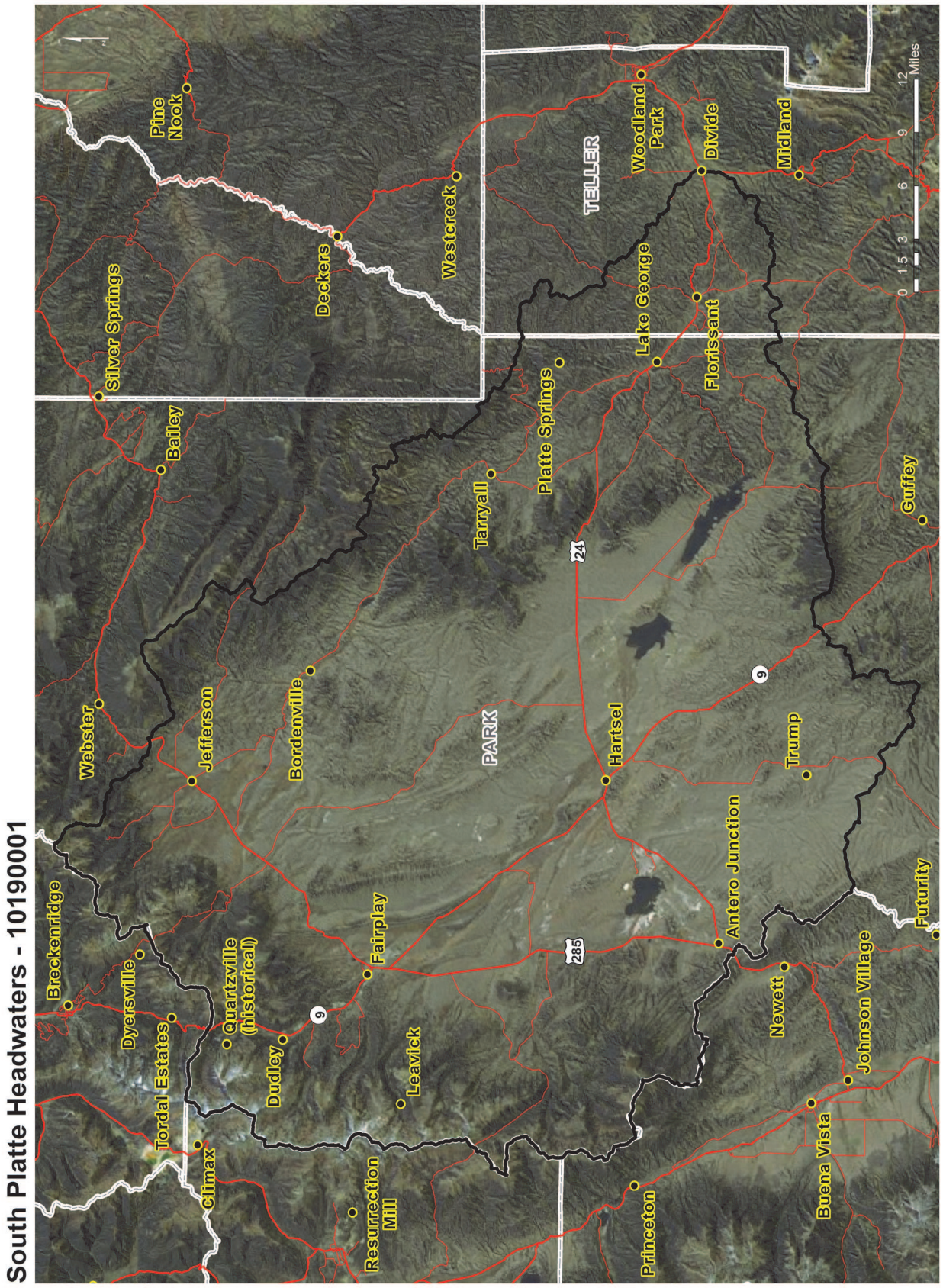
While rapid assessments provide less detail and analysis than full-blown studies and plans, they do provide the benefits of NRCS locally-led planning in less time and at a reduced cost. The benefits include:

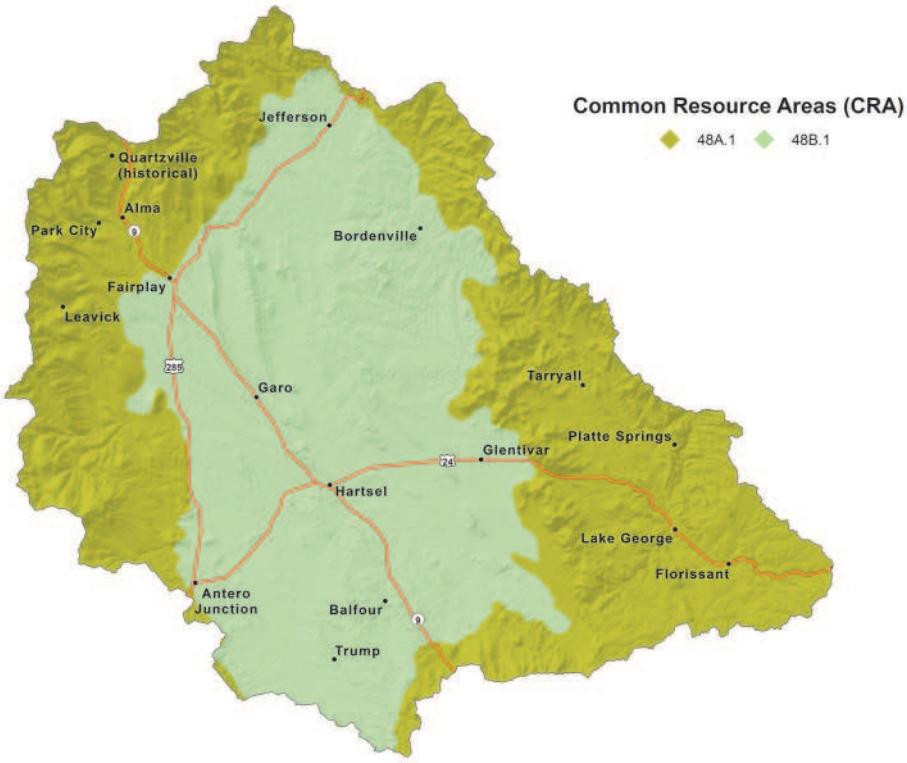
- Quick and inexpensive tools for setting priorities and taking action
- Providing a level of detail that is sufficient for identifying actions that can be taken with no further watershed-level studies or analyses
- Actions to be taken may require further Federal or State permits or ESA or NEPA analysis but these activities are part of standard requirements for use of best management practices (BMPs) and conservation systems
- Identifying where further detailed analyses or watershed studies are needed
- Plans address multiple objectives and concerns of landowners and communities
- Plans are based on established partnerships at the local and state levels
- Plans enable landowners and communities to decide on the best mix of NRCS programs that will meet their goals
- Plans include the full array of conservation program tools (i.e. cost-share practices, easements, technical assistance)

Rapid Watershed Assessments provide information that helps land-owners and local leaders set conservation priorities.



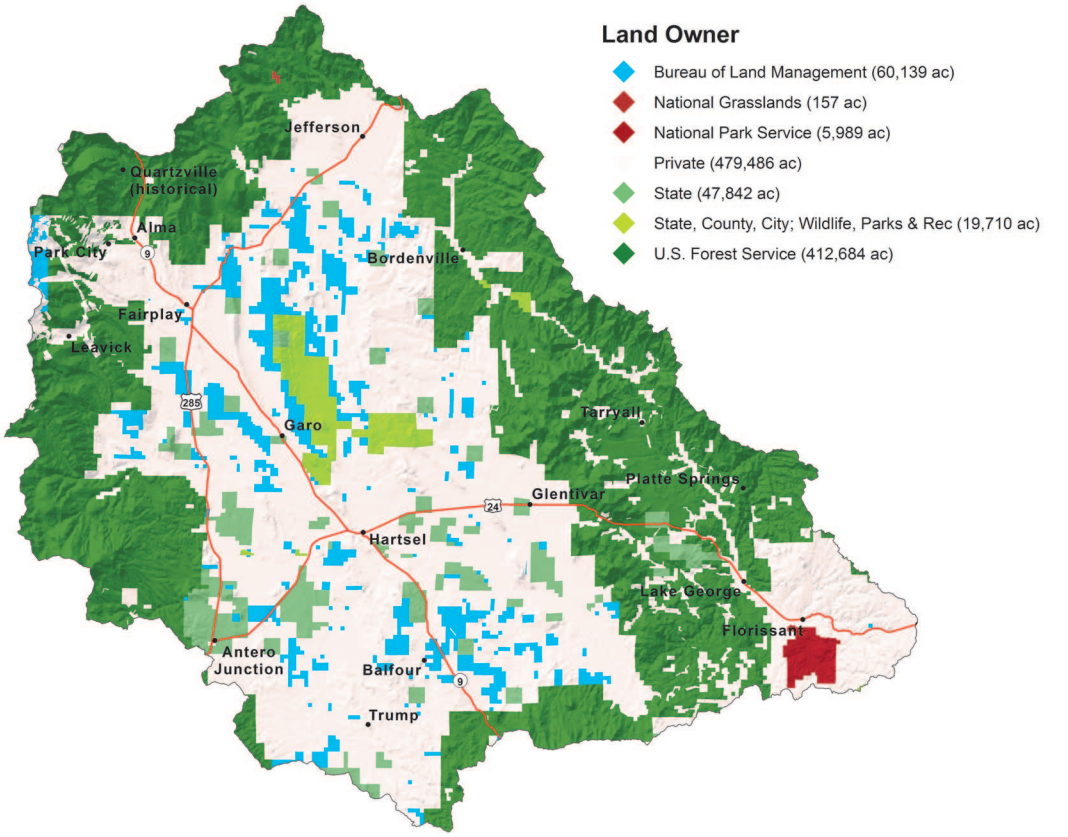
County	County Acres	County Acres in SOUTH PLATTE HEADWATERS Watershed	% of County in the Watershed	% of Watershed in the County
Park	1,413,689	972,062	68.8%	94.8%
Teller	357,406	53,536	15.0%	5.2%
		1,025,598		

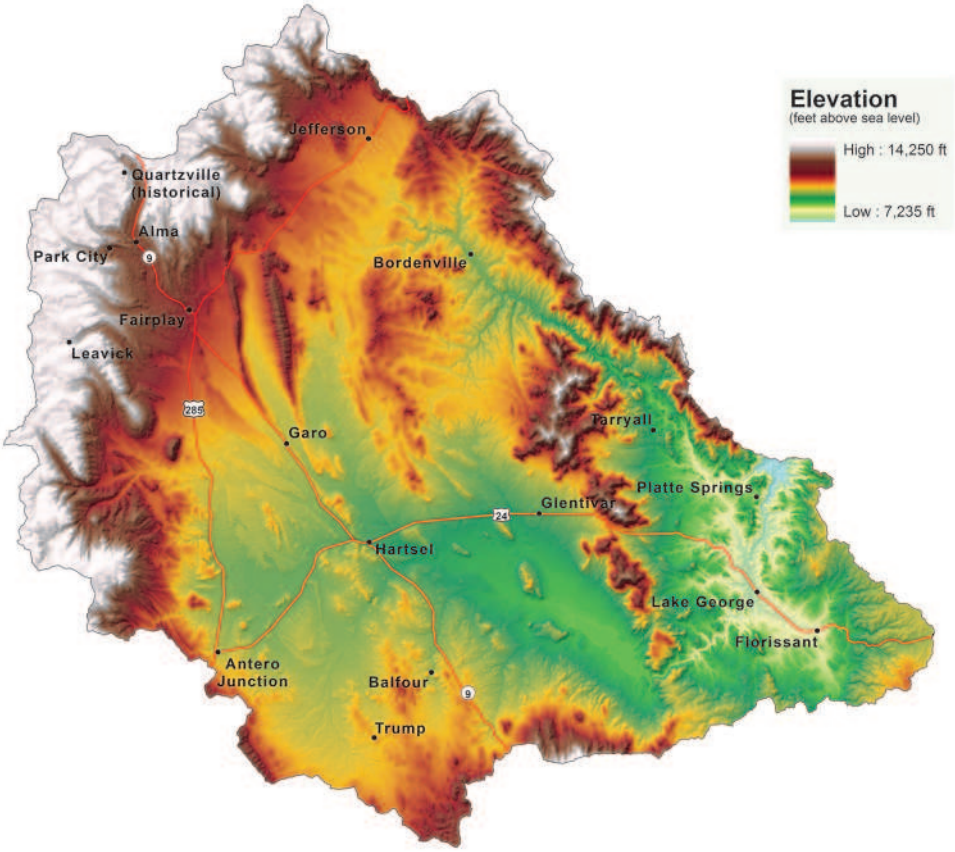

South Platte Headwaters - 10190001
Pine Nook
Silver Springs
Deckers
Westcreek
TELLER
Woodland Park
Divide
Midland
Lake George
Florissant
Platte Springs
Tarryall
Bailey
Webster
Jefferson
Bordenville
PARK
Hartsel
Guffey
Breckenridge
Dyersville
Tordal Estates
Climax
Quartzville (historical)
Dudley
Fairplay
Leavick
Resurrection Mill
Princeton
Antero Junction
Trump
Newett
Buena Vista
Johnson Village
Futurity
285
9
24
0 1.5 3 6 9 12 Miles

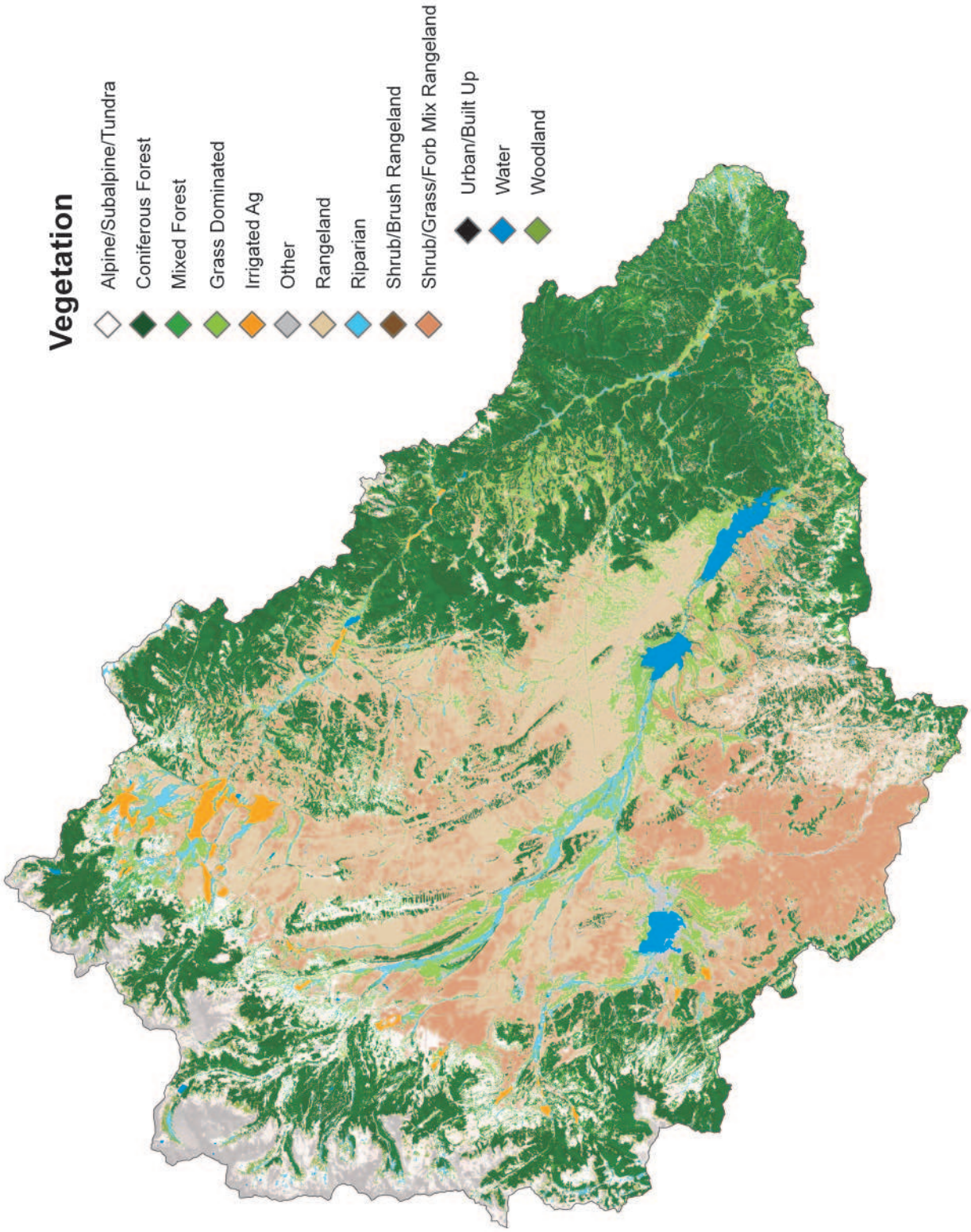


Common Resource Areas (CRA): Geographical areas where resource concerns, problems, and treatment needs are similar. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographical boundaries of the common resource area.

MLRA	CRA	CRA NAME	CRA DESCRIPTION
48A	**48A.1**	Southern Rocky Mountains - High Mountains and Valleys	This area is best characterized by steep, high mountain ranges and associated mountain valleys. The temperature regimes are mostly frigid and cryic; moisture regimes are mainly ustic and udic. Vegetation is sagebrush-grass at low elevations, and with increasing elevation ranges from coniferous forest to alpine tundra. Elevations range from 6,500 to 14,400 feet.
48B	**48B.1**	Southern Rocky Mountain Parks	This is an area of high elevation intermontane valleys surrounded by the Southern Rocky Mountains. The temperature regimes are mainly cryic, moisture regimes are aridic and ustic. Characteristic vegetation is big sagebrush-grass or grassland. Grazing is the dominant land use.


Land Owner
Bureau of Land Management (60,139 ac)
National Grasslands (157 ac)
National Park Service (5,989 ac)
Private (479,486 ac)
State (47,842 ac)
State, County, City; Wildlife, Parks & Rec (19,710 ac)
U.S. Forest Service (412,684 ac)
Jefferson
Quartzville (historical)
Alma
Park City
Bordenville
Fairplay
Leavick
285
Garo
Tarryall
Platte Springs
Glentivar
24
Hartsel
Lake George
Florissant
Antero Junction
Balfour
9
Trump


Elevation
(feet above sea level)
High : 14,250 ft
Low : 7,235 ft
Jefferson
Quartzville (historical)
Alma
Park City
Bordenville
Fairplay
Leavick
285
Garo
Tarryall
Platte Springs
Glentivar
24
Hartsel
Lake George
Florissant
Antero Junction
Balfour
9
Trump

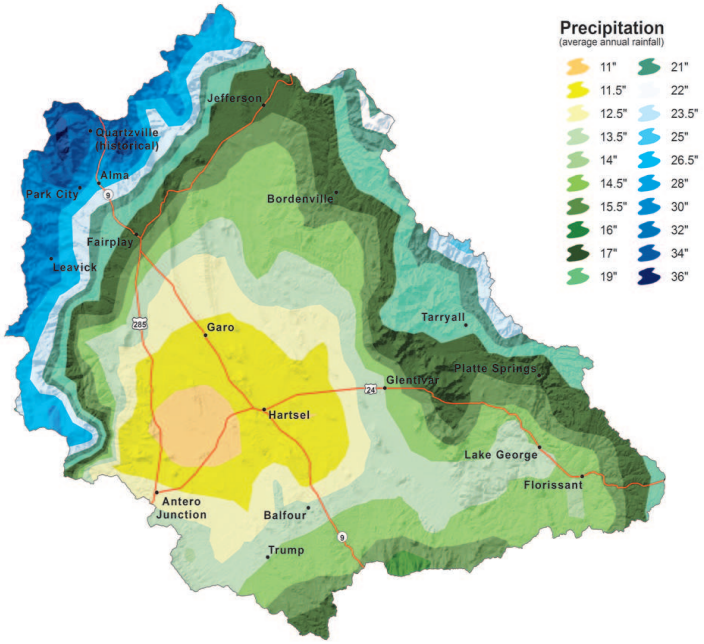

Vegetation
Alpine/Subalpine/Tundra
Coniferous Forest
Mixed Forest
Grass Dominated
Irrigated Ag
Other
Rangeland
Riparian
Shrub/Brush Rangeland
Shrub/Grass/Forb Mix Rangeland
Urban/Built Up
Water
Woodland

SOUTH PLATTE HEADWATERS Land Use	Total Acreage	Vegetation	Acreage
Cropland	1	Irrigated Ag*	7,733.0
Rangeland/Grassland	527,357	Alpine Grass Dominated	6,385.9
		Alpine Grass/Forb Mix	27,144.5
		Grass Dominated	95,372.3
		Grass/Forb Mix	86,311.0
		Grass/Forb Rangeland	128,011.7
		Sagebrush Community	61.8
		Sagebrush/Grass Mix	30.9
		Sedge	2,428.4
		Shrub/Grass/Forb Mix	121,348.4
		Sparse Grass (Blowouts)	5,643.1
		Subalpine Grass/Forb Mix	47,111.9
		Upland Willow/Shrub Mix	7,500.9
		Xeric Mountain Shrub Mix	2.6
Forest	406,745	Aspen	52,175.7
		Bristlecone Pine	7,465.4
		Douglas Fir	24,596.1
		Douglas Fir/Aspen Mix	12,466.5
		Douglas Fir/Englemann Spruce Mix	3,753.4
		Englemann Spruce/Fir Mix	83,655.2
		Fir/Lodgepole Pine Mix	61.0
		Limber Pine	8,394.8
		Lodgepole Pine	12,045.0
		Lodgepole Pine/Aspen Mix	131.0
		Lodgepole/Spruce/Fir Mix	135.6
		Ponderosa Pine	136,751.5
		Ponderosa Pine/Aspen Mix	11,466.8
		Ponderosa Pine/Aspen/Mesic Mtn.	41.7
		Ponderosa Pine/Douglas Fir Mix	17,734.6
		Ponderosa Pine/Mesic Mtn. Shrub	48.5
		Spruce/Fir/Aspen Mix	19,511.1
		Spruce/Fir/Lodgepole/Aspen Mix	991.0
		Spruce/Lodgepole Pine Mix	15,236.2
		SubAlpine Shrub Community	81.2
Riparian	33,966	Forested Riparian	267.5
		Herbaceous Riparian	19,355.8
		Shrub Riparian	968.5
		Willow	13,374.3
Water	8,205	Water	8,204.7
Other	41,622	Barren Land	10.2
		Commercial	8.2
		Rock	31,446.2
		Snow	15.1
		Soil	10,022.1
		Talus Slopes & Rock Outcrops	117.4
		Urban/Built Up	2.3
~Total Watershed Acres			**1,025,627**

*Colorado Decision Support Systems Data

Precipitation

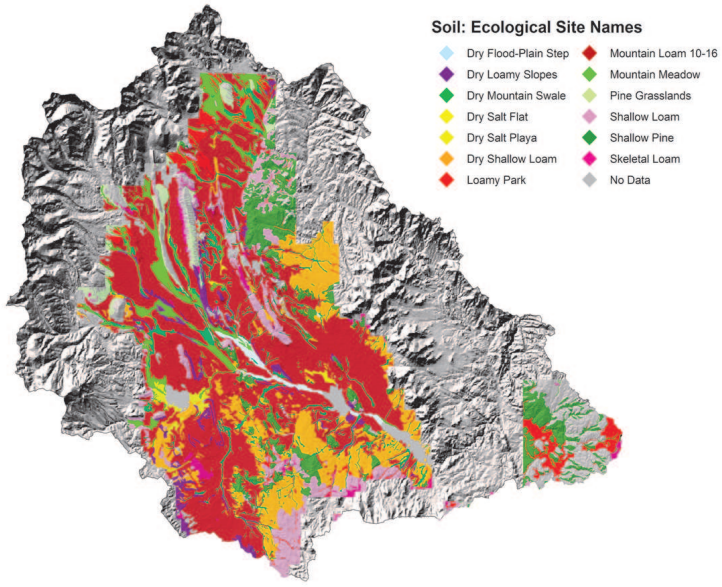
Droughts are regular visitors to the watershed as with the rest of Colorado. Statewide, in the 1900's alone, four prolonged dry spells occurred. There was one in the 1910s. Another, in the '30s, caused the dust-bowl period. The second worst drought on record in the state occurred in the mid-50s. A series of hot, dry summers following a period of scant mountain snowpack created water shortages. The fourth drought hit parts of Colorado in the late 1970s. In this century, the most severe drought since 1723 hit the state in 2002. Prior to the 1700's, researchers looking at tree ring records have found evidence of even more severe droughts, some lasting many years. Rainfall occurs as frontal storms in the spring and early summer and high intensity, convective thunderstorms in late summer. Maximum precipitation is from mid spring through late autumn. Precipitation in winter is snow.

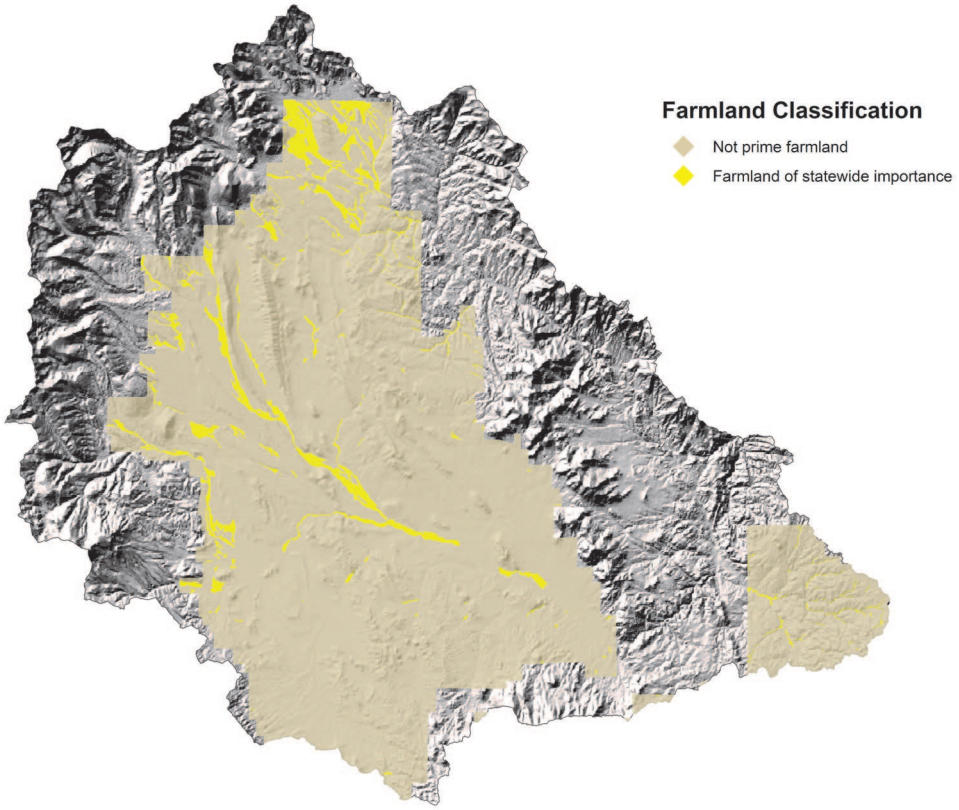


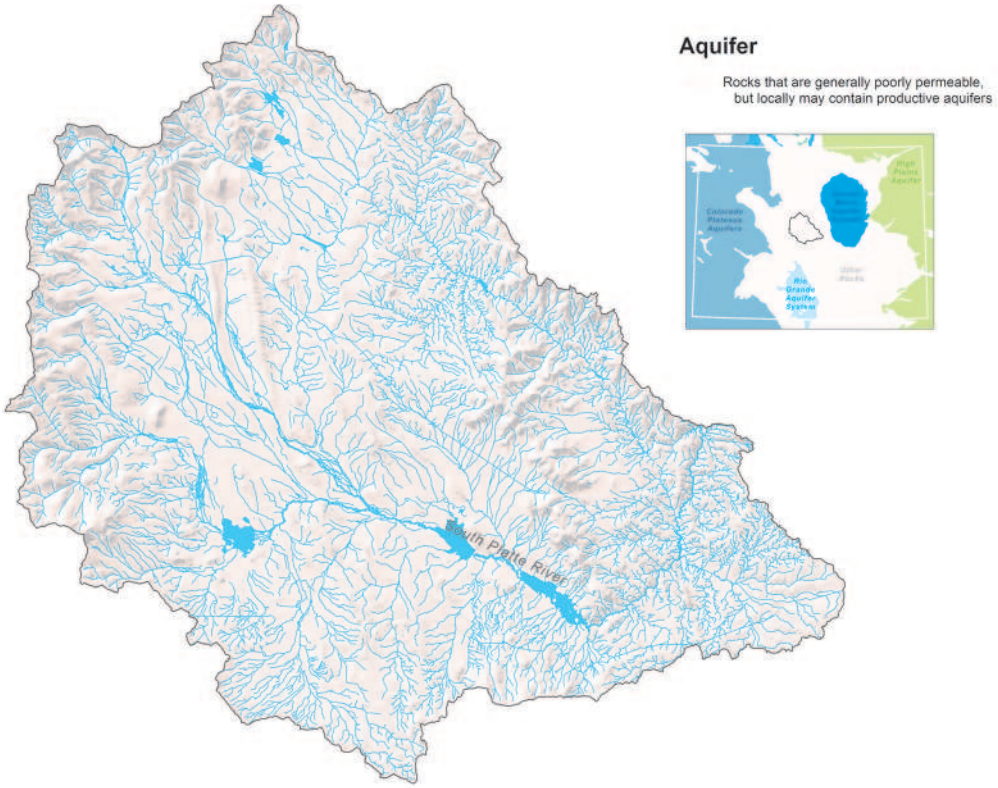
Ecological Sites

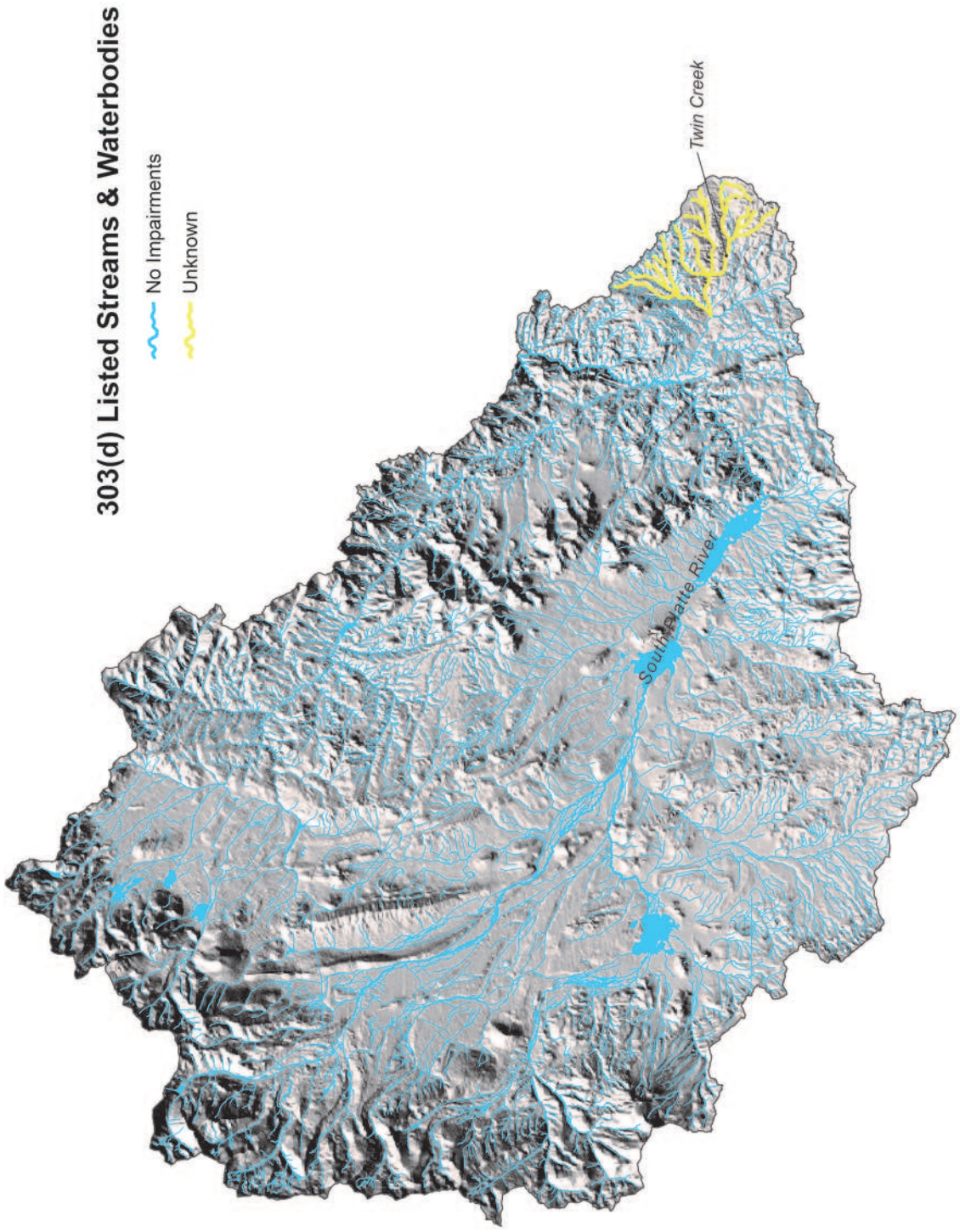
The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production.

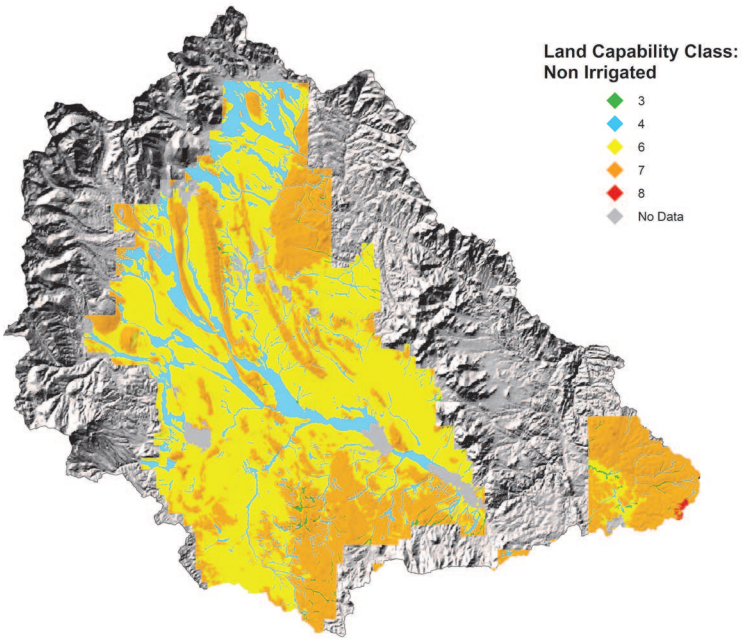
Ecological Site maps give an overall indication of the soils plant relationship in the area. More detailed descriptions of ecological sites are provided in the Field Office Technical Guide (FOTG). The FOTG is available in local offices of the Natural Resources Conservation Service (NRCS) and online at http://www.nrcs.usda.gov/technical/efotg/.




Farmland Classification
Not prime farmland
Farmland of statewide importance


Aquifer
Rocks that are generally poorly permeable, but locally may contain productive aquifers
South Platte River


303(d) Listed Streams & Waterbodies
No Impairments
Unknown
Twin Creek
South Platte River



Land Capability Classification

Class 1 - soils have few limitations that restrict their use.

Class 2 - soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 - soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 - soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 - soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 - soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

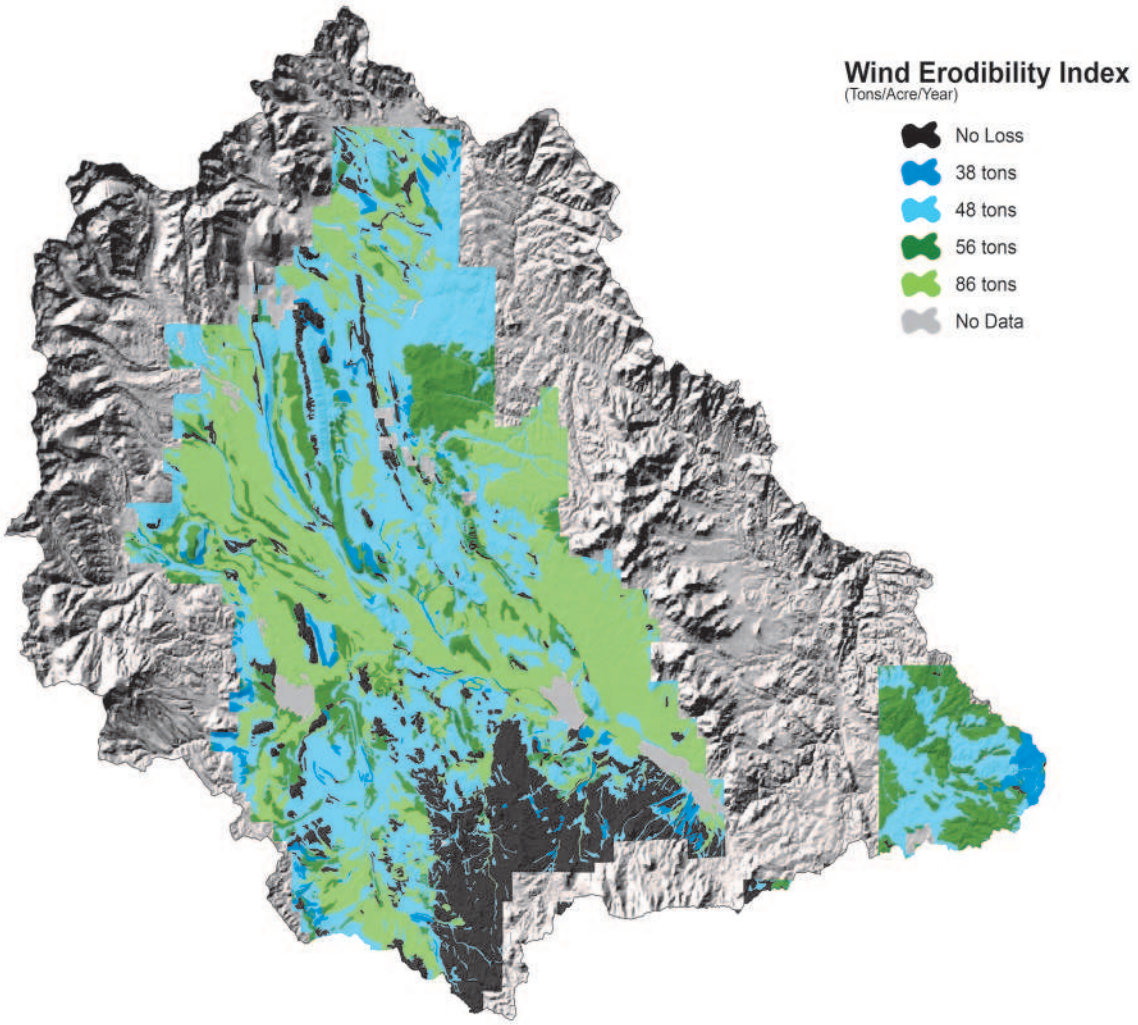
Class 7 - soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 - soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or aesthetic purposes.

The Wind Erodibility Index (WEI), is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion if it is assumed there is no vegetative cover or management.

Soils with an erodibility index equal to or greater than 8 are considered highly erodible.

As shown on the Wind Erodibility Index map, most soils in the Big Thompson Watershed are highly erodible.



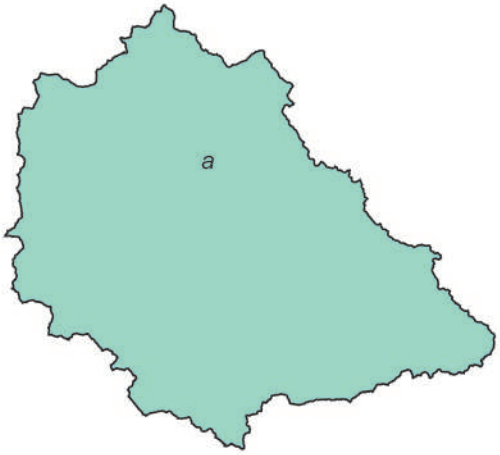
Common Name	Scientific Name	Class	Federal Status	State Status	Comments
American Peregrine Falcon	*Falco peregrinus anatum*	Birds	None	**Concern**	Occurs in the watershed
Bald Eagle	*Haliaeetus leucocephalus*	Birds	None	**Threatened**	Occurs in the watershed
Boreal Toad	*Bufo boreas boreas*	Amphibians	None	**Endangered**	Occurs in the watershed
Canada Lynx	*Lynx canadensis*	Mammals	**Threatened**	**Endangered**	Occurs in the watershed
Gunnison's Prairie Dog	*Cynomys gunnisoni*	Mammals	**Candidate**	None	Occurs in the watershed
Least Tern	*Sterna antillarum*	Birds	**Endangered**	**Endangered**	Occurs downstream of watershed; Depletions are a concern here.
Northern leopard frog	*Rana pipiens*	Amphibians	None	**Concern**	Occurs in the watershed
Pallid Sturgeon	*Scaphirhynchus albus*	Fish	**Endangered**	None	Occurs downstream of watershed; Depletions are a concern here.
Penland Alpine Fen Mustard	*Eutrema penlandii*	Plants	**Threatened**	None	Occurs in the watershed
Piping Plover	*Charadrius melodus*	Birds	**Threatened**	**Threatened**	Occurs downstream of watershed; Depletions are a concern here.
Townsend's Big-eared Bat	*Corynorhinus townsendii pallescens*	Mammals	None	**Concern**	Occurs in the watershed
Whooping Crane	*Grus Americana*	Birds	**Endangered**	**Endangered**	Occurs downstream of watershed; Depletions are a concern here.

Social Data	Park	Teller
Total population	14,523	2,055
Male	7,510	10,412
Female	7,013	10,143
Median age (years)	40	39.4
White	13,807	19,510
Black or African American	72	113
American Indian and Alaska Native	134	200
Asian	60	120
Native Hawaiian and Other Pacific Islander	4	16
Some other race	179	185
Hispanic or Latino (of any race)	628	718
In labor force (population 16 years and over)	8,134	11,493
Median household income (dollars)	51,899	50,165
Median family income (dollars)	57,025	57,071
Per capita income (dollars)	25,019	23,412
Families below poverty level	143	202
Individuals below poverty level	803	1096
X means that value is not applicale or not availiable		
Farms (number)	217	118
Land in farms/ranches (acres)	298,286	73,643
Average size farm/ranch (acres)	1,375	624
Median size farm (acres)	288	90
Average age of farmer or rancher	54.9	55.3
Net cash return from ag sales ($1,000)	-529	-227
Cattle and calves (number)	8,000	1,500

Identified Long Range Resource Concerns

Top Three Concerns within Conservation Districts

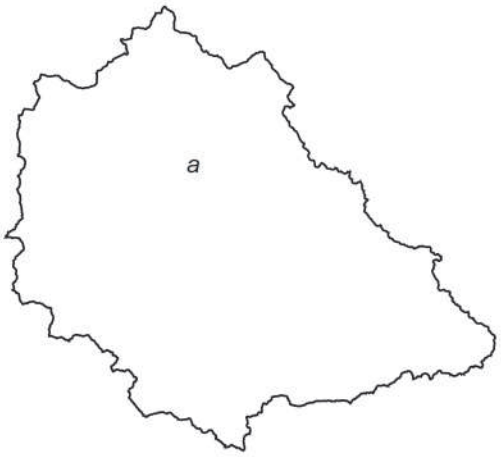
#1



Conservation Districts
a Teller-Park

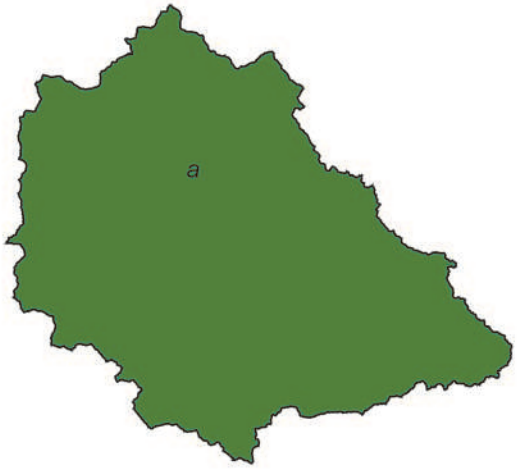
Water Erosion

#2



Land Use/Growth

#3



Forest Management

Selected Conservation Application Data			Big Thompson Watershed — 10190006		
	FY 2004	FY 2005	FY 2006	FY 2007	Total
Practices Applied					
Prescribed Grazing	0	63,164	25,078	12,366	100,608
Irrigation Water Management	0	0	0	223	223
Conservation Crop Rotation	0	0	0	0	0

Conservation Systems to Address Major Resource Concerns

Primary Resource Concern:	**Rangeland Health**			
Conservation System Description:	Prescribed Grazing—planned management that provides adequate recovery opportunity between grazing events and proper stocking of animals..			**Based on Conservation System Guide Code:** CO 48B.1-GR-01-R-Grazing
Practices	**Unit**	**Quantity**	**Cost/Unit ($)**	**Estimated Cost ($)**
Prescribed Grazing				
Fence (382)	Ft.	20,000	0.6	12,000
Pest Management (595)	Ac.	400	6,000	6,000
Pipeline (516)	Ft.	8,000	2.40	19,200
Upland Wildlife Habitat Management (645)	Ac.	na	na	
Watering Facility (614)	No.	3	600	1,800
Subtotal: Rangeland costs	Median Size Ranch—2,500 acres	24	39,000	**$936,000**

FOOTNOTES/ BIBLIOGRAPHY

303(d) listed streams within the Watershed were created using data from Colorado Department of Public Health & Environments' Water Quality & Control Commission. Impaired streams are current as of April 30, 2006. For a list of all Colorado impaired streams, locations and priority ratings, visit http://www.cdphe.state.co.us/regulations/wqccregs/100293wqlimitedsegtmdls.pdf.

Stream data from National Hydrologic Dataset http://nhd.usgs.gov

Threatened and Endangered Species information was gathered using data from the Colorado Division of Wildlife (CDOW) Natural Diversity Information Source (NDIS). NDIS GIS data may be downloaded at http://ndis.nrel.colostate.edu. For more information on Colorado's Endangered & Threatened Species, as well as Species of Concern, visit http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/ThreatenedEndangeredList/ListOfThreatenedAndEndangeredSpecies.htm or http://mountainprairie.fws.gov/endspp/CountyLists/COLORADO.htm

Resource Concerns were identified using the Colorado Association of Conservation Districts' (CACD) long range (10 year) plans from the period of 1996-2000. Only the top three environmental resource concerns for each district were used. For more information on Colorado's Conservation Districts, visit http://www.cacd.us.

Maps were generated using Soil Survey Geographic Database (SSURGO) tabular and spatial data. SSURGO data was downloaded for the following Colorado surveys:

Teller-Park Area (CO638) Published 5/19/2008

To download SSURGO data, visit http://soildatamart.nrcs.usda.gov. The surveys were then loaded into Soil Data Viewer http://soildataviewer.nrcs.usda.gov (a tool built as an extension to ArcMAP for quick geospatial analysis of soil data for use in resource assessment) and the subsequent data was exported to a GIS shapefile.

Vegetation data was generated using the Colorado Division of Wildlife's "Colorado Vegetation Classification Project" (CVCP) data. Completed in 2003, the CVCP is a landscape level vegetation dataset created using Landsat TM imagery and then formatted for GIS use. The species identified are an overview of the most common species associated in each cover type, in order of greatest occurrence. For more information on the Colorado Vegetation Classification Project, visit http://ndis.nrel.colostate.edu/coveg.

All border state (if applicable) vegetation data courtesy of the National Land Cover Dataset (NLCD). For more information visit http://www.mrlc.gov/mrlc2k_nlcd.asp

Common Resource Area (CRA), a subdivision of the Major Land Resource Area (MLRA), is a geographical area where resource concerns, problems, or treatment needs are similar. Geographic boundaries of a CRA are determined by landscape conditions, soil, climate, human considerations and other natural resource information. For more information on Common Resource Areas visit http://soils.usda.gov/survey/geography/cra.html.

Average Annual Precipitation data was developed through a partnership between the Natural Resources Conservation Service's (NRCS) National Water and Climate Center (NWCC), the National Cartography and Geospatial Center (NCGC), and the PRISM (the Parameter-elevation Regressions on Independent Slopes Model) group at Oregon State University (OSU), developers of PRISM. Mean annual precipitation maps were developed calculating averages of rainfall for the period of 1961-1990. For more information on PRISM data visit http://www.ncgc.nrcs.usda.gov/products/datasets/climate/docs/fact-sheet.html or for more information about technical aspects of PRISM, visit the PRISM website at http://www.ocs.orst.edu/prism.